

SPECIAL CONDITIONS

Permit Number 74398

Emission Standards

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit.

Operational Limitations

2. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60, Subparts A, Kb, VV, NNN, and RRR on Standards of Performance for New Stationary Sources promulgated for Volatile Organic Liquid Storage Vessels, for Equipment Leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI), for VOC Emissions from SOCMI Distillation Operations, and for VOC Emissions from SOCMI Reactor Processes.
3. These facilities shall comply with all applicable requirements of the EPA regulations in 40 CFR Part 61, Subparts A, VV, BB, and Y on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for Equipment Leaks, for Benzene Emissions from Benzene Transfer Operations, and for Emissions from Benzene Storage Vessels.
4. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than one percent are not authorized by this permit unless authorized on the MAERT. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than one weight percent are not consistent with good practice for minimizing emissions.
5. Fuel gas used in the combustion units associated with this permit (EPNs H-1, H-2, B-3, and B-4) shall be limited to pipeline-quality, sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet. **(TBD)**
6. The Flare (EPN FLR-1) shall be designed and operated in accordance with the following requirements:
 - A. The flare system shall be designed such that the combined assist natural gas and waste stream to the flare meets the 40 CFR § 60.18 specifications

of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

- B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications
 - C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.
7. Each tank truck filled shall pass annual leak-tight testing as follows:
- A. The permittee shall not allow any tank truck to be filled or emptied unless the tank being filled or emptied has passed a leak-tight test as described in the Texas Administrative Code, Title 30, § 115.235 within the last year as evidenced by a prominently displayed certification affixed near the Department of Transportation certification plate which shows:
 - (1) The date the tank truck last passed the leak-tight test required by this condition, and,
 - (2) The identification number of the tank truck.

Leak Detection and Repair Program

8. Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28MID

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

- A. These conditions shall not apply (1) where the volatile organic compounds (VOC) has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68° F or (2) operating pressure is at least 5 kilopascals

(0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.

- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made available upon request.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in Title 40 Code of Federal Regulations § 60.485(a) - (b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump and compressor seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

- H. Damaged or leaking valves, connectors, compressor seals, and pump seals found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
- I. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

- J. The percent of valves leaking used in paragraph I shall be determined using the following formula:

$$(Vl + Vs) \times 100/Vt = Vp$$

Where:

- Vl = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.
- Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.
- Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.
- Vp = the percentage of leaking valves for the monitoring period.

- K. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.
- L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard, or an applicable National Emission Standard for Hazardous Air Pollutants and does not constitute approval of alternative standards for these regulations.
9. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive Director.

Cooling water VOC concentrations above 0.8 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the completion of batch operations at the process unit in which the leak occurs.

Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 1 ppmw. The VOC concentrations above 1 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

10. Facility operations are limited to the handling of those chemicals appearing on the 'Approved Chemicals List (ACL), Handling Limitations'. New chemicals or chemical mixtures may be authorized through the use of the procedure below, 30 TAC Chapter 106, or 30 TAC Chapter 116. **(TBD)**
 - A. Short-term (pounds per hour [lb/hr]) emissions shall be calculated for each chemical at each affected source; emission rates shall be calculated in accordance with the methods documented in the amendment application dated January 20, 2005. The calculated emission rates shall not exceed the maximum allowable emission rate at any emission point.
 - B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Section.
 - C. The compound may be substituted for a currently authorized compound by satisfying one of the following conditions:
 - (1) The total maximum emission rate from all sources is less than 0.04 lb/hr and the ESL greater than 2 µg/m³; or
 - (2) The emissions of the compound from each and every emission point must satisfy:

$$(MW \times VP/ESL)_N \leq (MW \times VP/ESL)_E$$

$(MW \times VP/ESL)_N$ = molecular weight multiplied by vapor pressure of new compound(s) divided by its ESL

$(MW \times VP/ESL)_E$ = the highest ratio of the previously authorized compound molecular weight multiplied by vapor pressure divided by its ESL)

- D. The permit holder shall maintain records of the information below and the demonstrations in steps A through C above. The following documentation is required for each chemical or chemical mixture:
- (1) Chemical name(s), composition (wt. %), and chemical abstract registry number if available.
 - (2) True vapor pressure at maximum hourly and annual average storage temperature.
 - (3) Molecular weight.
 - (4) Storage tanks, loading areas, and fugitive areas where the material is to be handled and the emission control device to be utilized.
 - (5) Date new compound handling commenced.
 - (6) Material Safety Data Sheet.
11. For each approved chemical, the attached 'Approved Chemical List, Handling Limitations' indicates the control method and additional handling restrictions for that chemical. Each chemical shall be controlled and handled in accordance with these specifications. Chemicals accepted in accordance with paragraph C of Special Condition No. 10 shall be controlled as required by the attached 'Approved Chemical List Handling Limitations' for a chemical in a similar chemical service with an equal or higher toxicity rating $((MW \times VP)/ESL)_N$. Mixtures of chemicals shall be subject to the most stringent handling restrictions specified for any of the chemical constituents present in concentrations greater than 0.5 percent by volume. Mixtures of chemicals requiring different control methods shall be routed to the appropriate sequence of control devices. Records of column and reactor charge rates shall be maintained on site for a period of two years. **(TBD)**
12. During loading operations the facility shall employ a control method specified on the 'Approved Chemicals List, Handling Limitations' to control emissions of compounds with an aggregate partial pressure greater than or equal to 0.5 psia at the maximum operating temperature. **(TBD)**
13. Halogenated VOC streams shall vent through a carbon adsorption system (CAS) consisting of at least two activated carbon canisters that are connected in series.

- A. The CAS shall be sampled each day of use to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during loading. Daily testing is not required if no loading takes place within the sampling interval.
- B. The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), photo ionization detector (PID), or a TCEQ-approved alternative detector. The instrument/FID/PID must meet all requirements specified in Section 8.1 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:
 - (1) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane or isobutylene at a concentration within ± 10 percent of 100 ppmv, and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted.
 - (2) Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.
 - (3) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, during loading.
- C. Breakthrough shall be defined as the highest 1 minute average measured VOC concentration of at least 100 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister before the next loading session. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.
- D. Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:

- (1) Sample time and date.
 - (2) Monitoring results (ppmv).
 - (3) Corrective action taken including the time and date of that action.
 - (4) Process operations occurring at the time of sampling.
14. Tanks are approved to store the liquids on the 'Approved Chemical List, Handling Limitations' or in accordance with Special Condition 10. Storage tanks are subject to the following requirements. **(TBD)**
 - A. Storage tank vents and loading operations will be controlled in accordance with the approved control methods specified on the attached 'Approved Chemical List, Handling Limitations' for each chemical handled. Regardless of the control method indicated on the 'Approved Chemical List, Handling Limitations', all storage tank vents will be controlled if (1) the VOC being stored has an aggregate partial pressure of greater than or equal to 0.5 psia at the maximum expected operating temperature and, (2) the storage tank capacity is greater than or equal to 25,000 gallons.
 - B. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.
 - C. The permit holder shall maintain records of storage tank operations on a project basis that include the tank identification number, control method used, tank capacity in gallons, the name of the material stored, VOC molecular weight, VOC average temperature in degrees Fahrenheit (for heated tanks only), VOC vapor pressure at the average material temperature in psia, VOC throughput, and calculated VOC emissions.

Emissions for tanks shall be calculated using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."
15. The caustic scrubbing system shall maintain a solution pH greater than 8. Documentation including engineering calculations establishing the solution pH (or concentration) and circulation rate shall be maintained for each project requiring use of the scrubber. The pH and the circulation rate of the scrubbing solution shall be monitored and recorded at least once per day for each day of use. The scrubber shall vent to the flare.

16. Before loading a marine vessel with a VOC which has a vapor pressure equal to or greater than 0.5 pounds per square inch absolute under actual storage conditions, the owner or operator of the marine terminal shall verify that the marine vessel has passed an annual vapor tightness test as specified in 40 CFR § 63.565(c) (September 19, 1995) or 40 CFR § 61.304(f) (October 17, 2000).

Boilers

17. Boiler 3 and 4 (EPNs B-3 and B-4) shall be equipped with low NOx burners and NOx and CO emissions from them shall not exceed the following: **(TBD)**

0.036 lb NOx/MMBtu on both hourly and annual average

50 ppmvd CO corrected to 3 percent oxygen on an hourly and annual average

Records shall be kept on site to demonstrate compliance with these emission limits and shall be made applicable to the TCEQ personnel or any local authority with jurisdiction.

18. The natural gas shall be sampled every 6 months to determine total sulfur and net heating value. Test results from the fuel supplier may be used to satisfy this requirement. **(TBD)**
19. The permit holder shall install and operate a totalizing fuel flow meter to measure the gas fuel usage for each boiler and fuel usage for each shall be recorded monthly. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent. **(TBD)**
20. Quality assured (or valid data must be generated when the boiler is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the boiler operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. **(TBD)**

Initial Determination of Compliance

21. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the EPN B-3 and B-4 to demonstrate compliance with the

MAERT and Special Condition 17. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director. **(TBD)**

D. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

- (1) Proposed date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.
- (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
- (7) Procedure/parameters to be used to determine worst case emissions during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

E. Air contaminants emitted from the Boilers to be tested for include (but are not limited to) NO_x and CO.

F. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the

facilities and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

- G. The facility being sampled shall operate at maximum steam production rate during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the steam production rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

- H. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

22. Sampling ports and platform(s) shall be incorporated into the design of B-3 and B-4 boiler stack according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director. **(TBD)**

Dated **TBD**